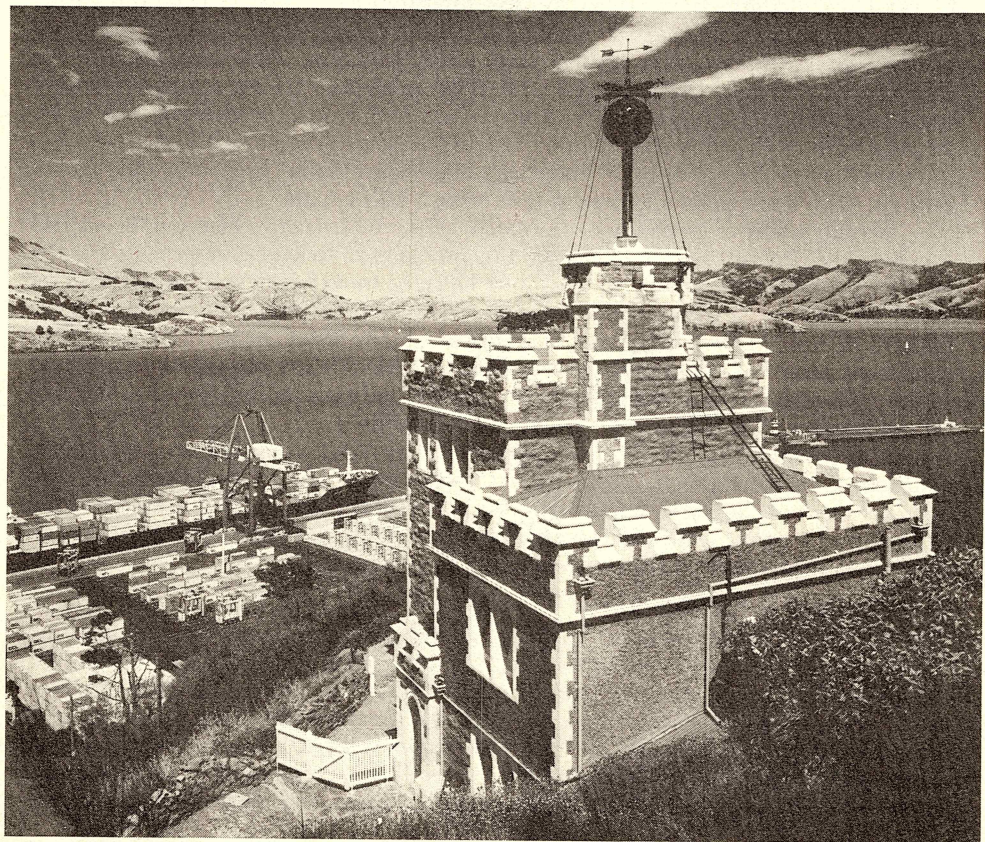


LYTTELTON TIMEBALL STATION



THE TIMEBALL STATION set dramatically on the Lyttelton hills is a constant reminder of the town's past as a busy port. The purpose of the timeball was to signal exact Greenwich time to ships in the Lyttelton port. With this information captains of coastal vessels and wool clippers crowding the busy port could note the error of their chronometers and adjust them to Greenwich time. Correct longitude could be then calculated by comparing Greenwich time with local time. Knowing exact longitude was a vital safety measure. For instance 4 seconds of time is 1 minute of longitude and means a difference of 1829 metres at the equator and 915 metres at latitude 60°.

From the time when the first timeball was built at Greenwich in 1833 other timeballs began to appear around the world although few had buildings especially constructed for them. In New Zealand timeballs were set up in Wellington, Dunedin, Auckland and Lyttelton. Only Lyttelton's survives. The go-ahead Canterbury Provincial Council constructed the Lyttelton timeball as part of its vigorous policy of improving its port facilities. Time signals using the zinc ball began on 23 December 1876 and continued until 31 December 1934 when radio signals took over.

The Building

The site above Officers' Point where the old flagstaff stood was chosen for the station as the signal could be seen from any point in the inner and outer harbour and also from the heads. The original scoria castle was designed by the Canterbury Provincial architect, Thomas Cane, and built by master stonemason William Brassington and his partner, John Kennington. Inmates from the Lyttelton Gaol helped prepare the site by cutting a platform in the rocky hillside. Brassington used scoria from the nearby Sumner Road quarry and dressed Oamaru limestone for the quoins and the surrounds of doors and windows. The original three-storey building, 10.4 metres high, was completed in August 1876. It contained three residential rooms and two working rooms. Brassington's high quality work is admired today, particularly the spiral staircase with its elegant wrought-iron handrail, and the lower part of the stair which is integrated with the column it encircles. Fine white stone fireplaces and timber ceilings, with kauri joists and oregon pine beams, still remain.

Within a year of completion, in March 1877, the Lyttelton Harbour Board had inherited the timeball station, along with its problems of leakage and seepage. For the next four years architects and builders were engaged in trying to seal the scoria outer walls. By 1880 the brown volcanic stone was completely covered with a cement stucco plaster. A new kitchen wing was also added. From 1880 until 1911 no further extensions were made though damp remained a problem, there was no bathroom, and lighting was still by candles and kerosene lamps. Conditions were to prove intolerable for the Porteous family living there with their 7 children.

Alterations, begun in 1911 and completed in 1912, consisted of a two-storey addition of entrance porch, bedroom and bathroom on the ground floor, and two bedrooms upstairs linked by a staircase. This was built of brick and covered in stucco to fit in with the older parts. The casement windows in the old building were altered to open outwards to make them weatherproof when open.

The Timeball and its Workings

The timeball mechanism is 15 metres tall with the ball at the top (hoisted up manually) and the cylinder at the bottom. The ball, made of zinc (the original ball) is threaded on to the Oregon pine mast by a hole through its centre. The ball rests on a catch which, when released, allows the ball to slide down the mast (3 metres in 8 seconds). The catch releasing the ball was triggered by a magnet in the timeball mechanism activated by an electric current released by a special clock in the clockroom at the foot of the spiral staircase. The hour, minute and second wheels of the

astronomical clock all had to be in the exactly correct position for the current to be switched on. The colonial observatory in Wellington telegraphed exact Greenwich time through the Lyttelton Post Office to the timeball clock. From 1916 the time was telegraphed direct from the observatory to the timeball mechanism itself.

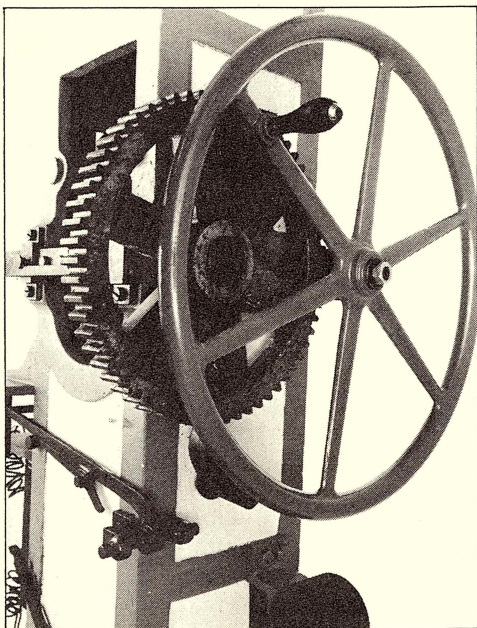
Messages by Flags

The signalling of shipping arrivals by flags from Officers' Point had preceded the timeball by many years. However in 1879 the Lyttelton Harbour Board installed a permanent resident signalman at the station. From the lookout or 'watch' room on the second floor the first signalman 15 year old self-taught John Toomey kept watch and received from the heads over 6 km away the flag-signal advising him of a ship's approach. He then ran up flags on the timeball flagstaff to advise the town. The first flag gave the type of ship, for example, blue for brig, red and white for barque, and the code flag gave the name of the ship. Flag signalling was used until 1941. Every year since 1930 the code flags for the *Charlotte Jane* have been hoisted to commemorate the arrival of the first four ships in 1850.

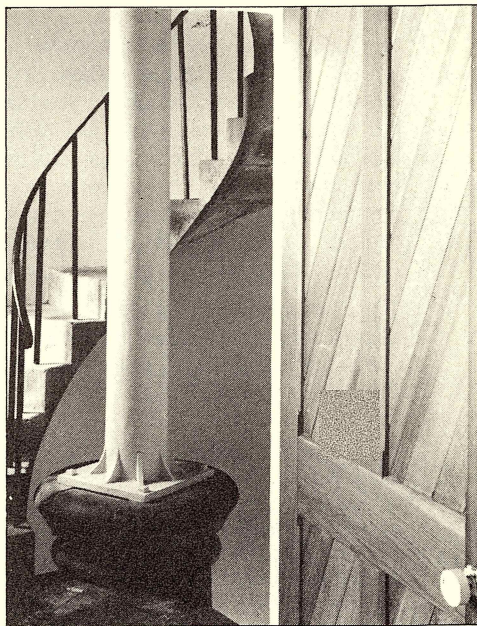
Timeball Keepers and Signalmen

During the station's operations (58 years of timeball-keeping, 1876-1934, and 65 years of flag-signalling, 1879-1941) there were only 5 resident operators.

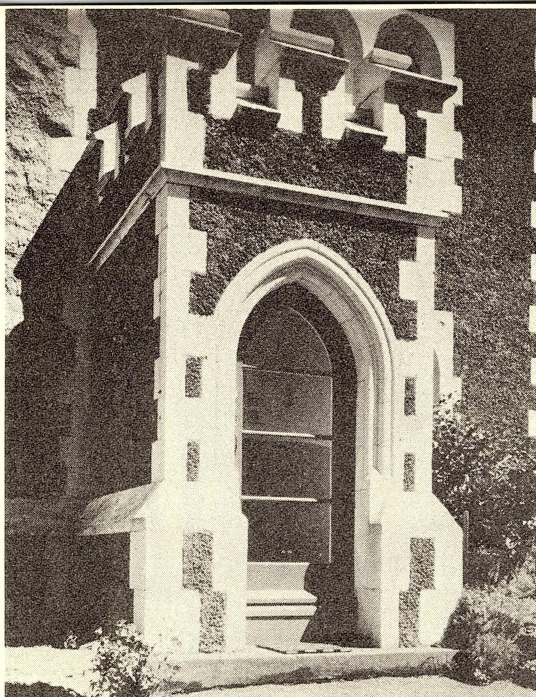
Alexander Joyce, timeball keeper from 1876-1914, retired at 74. He lived at the station for only 3 years and moved out when the first flag-signalman moved in. This was the 15 year old John Toomey. Toomey was followed by Alfred Button in 1892 and Button, by John Porteous in 1905. On Joyce's retirement Porteous took over both functions, and so did the last operator Jack Burns (1932-1941). Although living conditions were far from comfortable, particularly up till 1912, the timeball employees and their families stayed with the job for long periods.



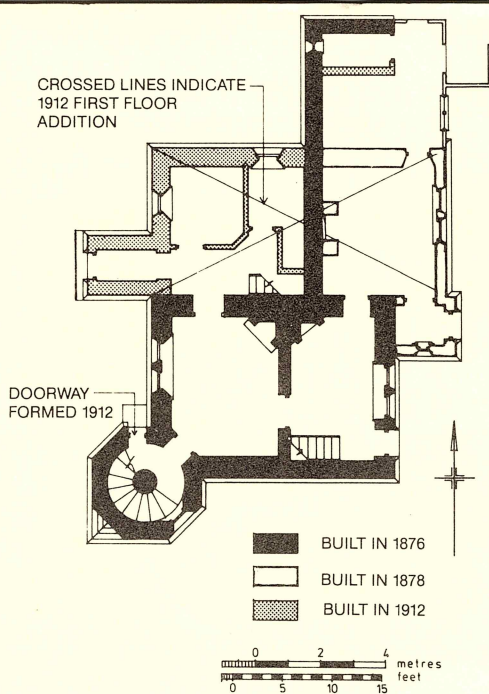
The timeball is hoisted to the top of the mast by means of this handwheel. Photo: MPS



The upper part of the spiral staircase encircles a void with the timeball cylinder inside it. Photo: MPS



Entrance shows the boldness of the dressed Oamaru limestone contrasting with the protective stucco. Photo: T. Hann



Plan of the Timeball Station showing additions and alterations 1876-1912.

Restoration of the Station

In 1969 the Lyttelton Maritime Association was formed by over 200 Canterbury people to restore the by then neglected Timeball Station. The patron was A C Brassington, grandson of the original stonemason. Lack of money and resources made the restoration too daunting a task for volunteers. Inspired by their zeal, the New Zealand Historic Places Trust took over the responsibility in 1973. By the end of 1976, with the help of local enthusiasts, the Ministry of Works and Development had completed restoration of the timeball and its station. The Lyttelton timeball is thought to be one of only five in the world still in working condition. The ball is not, however, dropped except on special occasions.

The station is situated above Reserve Terrace and is open 7 days a week from 10am (except Christmas Day). There is a steep climb from Reserve Terrace where cars are parked to the station itself. Visitors are welcome to picnic on the lawns. Telephone (03 28) 7311.

The New Zealand Historic Places Trust exists to identify, protect and preserve New Zealand's historic places and to foster public interest in them. It does this by opening its own properties to the public; by protecting historic sites, traditional sites and archaeological sites; by encouraging owners of monuments and old European and Maori buildings to preserve and restore them, and by fostering public interest in historic places through plaques, noticeboards and publications. If you want further information about the Trust or would like an application form to join the organisation write to the Director of the New Zealand Historic Places Trust, PO Box 2629 Wellington Phone (04) 724-341.

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